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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,468	06/26/2003	Xing Yuan	IGC-104	3504
7590 03/08/2006			EXAMINER	
George L. Rideout, Jr. 4400 Abbott Grove Drive Crestwood, KY 40014			CASTELLANO, STEPHEN J	
			ART UNIT	PAPER NUMBER
			3727	
DATE MAILED: 03/08/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,468

Applicant(s)

YUAN, XING

Examiner

Stephen J. Castellano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8, 10, 12 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 10, 12 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1-5-06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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Claims 6, 7, 9, 11, 13 and 14 have been canceled. Claims 1-5, 8, 10, 12 and 15 are pending.

Applicant should note that claims 2-4 have been submitted without a status identifier. This is improper. Applicant should provide proper status identifiers for all claims pending or canceled.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bridges.

Bridges discloses an apparatus for securing an inner vessel.

Re claims 1-3, the apparatus comprises at least one bottom component (16 at bottom of Fig. 1) having at least one mating structure (see Fig. 5) with male adapter (pin 26) and female adapter (support arm 16 has an opening for pin 26). It is believed that at least one of the bottom support components holds the inner vessel elevated from the bottom of the outer vessel under compression due to the consideration of a significant weight of the inner tank and its contents and the fact that nine support members are shown adjacent the inner tank's bottom and six support members are used on the top and sides. This leads one of ordinary skill to believe that the inner tank's weight is borne mostly by the bottom supports in compression. A side support component includes the supports 16 at the sides.

Re claims 8 and 12, the apparatus comprises a first mating structure means coupled in compression for preventing rotational movement (the support arms 16 at the bottom) and a

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second mating structure means for preventing axial movement (the support arms 16 on the sides and top). 112, sixth paragraph has not been invoked since the third prong of the means plus function test has failed due to the presence of “mating structure” that prevent rotational movement and axial movement, respectively.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges.

Official notice is taken that high-temperature superconducting cryogenic devices and the use of liquid nitrogen for cooling in cryogenic systems are well known. It would have been obvious to modify Bridges for use as a superconducting cryogenic system for providing the cryogenic temperatures needed in superconducting. It would have been obvious to add liquid nitrogen to keep the inner tank's contents cooled.

Claims 1-5, 8, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges in view of Segura and de Chazal.

Re claims 1-3, 8, 10 and 12, this rejection is applied insofar as the bottom support members are in tension rather than compression. Bridges discloses the invention except for a square pin within a square opening and being in compression. Segura teaches bottom and side support components of hydraulic or mechanical composition that provides male pistons and female cylinders, the system is design so that every piston is in compression as tension would pull apart and destroy the support component. The bottom supports limit and thusly prevent

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rotation as well as horizontal and lateral movement. It would have been obvious to modify the bottom supports to be the piston-cylinder arrangement to externally control the dashpots enabling the inner tank to be optimally stabilized with the ship structure.

Re claims 10 and 15, de Chazal teaches a square projection 66 fitting within a square aperture 22. It would have been obvious to modify the piston-cylinder arrangement of Segura to be a square piston within a square cylinder to provide an alignment mechanism for each piston and cylinder.

Re claims 4 and 5, Official notice is taken that high-temperature superconducting cryogenic devices and the use of liquid nitrogen for cooling in cryogenic systems are well known. It would have been obvious to modify Bridges for use as a superconducting cryogenic system for providing the cryogenic temperatures needed in superconducting. It would have been obvious to add liquid nitrogen to keep the inner tank's contents cooled.

Applicant's arguments with respect to claims 1-5, 8, 10, 12 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37


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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Castellano whose telephone number is 571-272-4535. The examiner can normally be reached on Tu-F 6:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Newhouse can be reached on 571-272-4544. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Stephen J. Castellano  
Primary Examiner  
Art Unit 3727

sjc